



BRITISH HONDURAS

REPORT OF THE DEPARTMENT OF AGRICULTURE FOR THE YEAR ENDED 31st DECEMBER, 1952.

PART I—AGRICULTURE IN THE COLONY

GENERAL

1. The Archives of British Honduras contain an entry dated 1839 in which the then Superintendent of the Colony drew attention to the difficulties, such as the want of capital and labour and the varied and scattered nature of the soils, which would cause compliance with instructions received to result in ruin to the prospects of stimulating agriculture. The entry continues—that because of the exhaustion of mahogany, agriculture is the only industry on which the Colony can depend.

2. Owing to the fact that the hinterland became more accessible the exploitation of mahogany did not cease as was then forecast, and the old traditions of forest work were further maintained by the extraction of other timbers and chicle.

3. Today however the statement is more pertinent, not only as regards the exhaustion of mahogany but also concerning the difficulties facing agricultural development.

4. At first sight it may appear depressing that despite this timely warning, of over a hundred years ago, little of a stable and prosperous agricultural economy has yet been evolved. This is not so, for the adoption of a very different livelihood is no easy task, particularly when the old one still exists and attracts. However laborious the timber extraction may be, it is essentially a destructive and peripatetic existence, doing nothing to encourage the proper care of that land whence not only the forests but also any agricultural potential must stem.

5. The one has been destructive and seasonal, the other requires a different temperament and approach,—a progressive creation based on a permanent land pride. Furthermore it necessarily must be dependent on adequate capital and labour, rudimentary knowledge of basic principles and favourable markets and communications. It has been the want of these which have perforce stultified the evolution of the agricultural economy.

6. Belatedly perhaps, but with a greater sense of conviction, the Colony is embarking on a programme of agricultural development. Amongst all sections of the Community there is a vital desire to progress and to succeed. With the approval by the Secretary of State of the Development Plan Part II, funds have been made available to cover the initial 4 years, years of the greatest significance to the Colony's agriculture. The total net allocation for Agriculture is £310,000, details of which are as set out in Appendix VIII.

7. Like so many other plans, there have been delays and disappointments in obtaining the necessary staff and equipment, but progress has been made, as this report will show, and as 1952 closes, there are indications that 1953 will see the plans becoming more than mere paper dreams.

8. So much then for the past and the future,—and to deal with the year 1952 and its place in the agricultural history of the Colony:—

WEATHER CONDITIONS.

9. Small though it may be, British Honduras has a coastline from North to South of 174 miles and an average rainfall range within these limits of from 52 to 166 inches. With the main agricultural areas for the most part near to the Coastline, it is seldom that an average year is experienced everywhere. The best to be expected is a favourable one, with a good rainfall distribution and no calamitous storms. In this respect 1952 was a favourable year, but crop performance was below that of 1951.

10. In general the rainfall was above average, with regular scattered showers making the early dry season less severe than usual. In the northern areas heavy preplanting rains militated against a good burn and this afterwards resulted in less productive corn crops owing to weed competition. Corn crops planted on low land again suffered in all Districts from water-logging in July and August; and some flooding caused slight damage in Toledo District. Stann Creek Agricultural Station measured the highest April rainfall on record there with 11.75 inches. Heavy rains also impeded the early rice harvest in Toledo District, and were largely to blame for the poor yields of corn in the three Indian Village areas at the South West extremity of the Colony.

11. As the year closed however, the dry season set in early and prospects for the Red Kidney Bean Crop were already beginning to look poor.

12. The highest temperature recorded at Stann Creek was 96° on the 25th July, although September was the hottest month with a mean maximum of 89°. December was the coldest with a mean minimum of 65°. At Belize the highest recorded temperature was 95° also in July, with August the hottest month, mean maximum 88.5°.

13. A summary of meteorological and rainfall records is attached as Appendix I.

14. During the year the number of rainfall recording stations was again increased, from 27 to 42, and a far wider and more reliable coverage is resulting than has been possible heretofore. The Department has now taken over responsibility for collating all the returns and providing the necessary equipment. Thanks are due to all those Departments and private individuals who are cooperating in this service.

15. The Director of the British Caribbean Meteorological Services paid a visit to British Honduras in March and advised on methods of attaining greater efficiency and an extended reporting service.

16. Equipment is now on order for the establishment of weather recording stations at the four agricultural stations. Four members of the Department attended a short meteorological course at the airport, and subsequently weather reports have been submitted daily to the airport from the Central Farm and Stann Creek.

AGRICULTURAL POLICY.

17. No radical changes in policy have occurred, although, because the emphasis of the Development Plan has been placed upon agriculture, requests for extra Departmental provision were made in the Budgetary Estimates for 1953.

18. The formation of Young Farmers Clubs in the Northern District and the encouragement of producer associations elsewhere, have been actively pursued with a view to the adoption of a more Cooperative approach in agriculture. Whilst the formation of such associations have been attempted in the past unsuccessfully, their existence now is vital to future development. At the present time there are possibilities that at least five, for Coconut, Citrus, and Sugar Cane Growers, Vegetable Producers and Livestock owners, may shortly result.

19. A third staff course was held in December, and the value of these annual gatherings is being clearly exemplified in the benefits derived by all concerned.

20. The Agricultural section of the Development Plan, Part II, contains provision for the agricultural training of staff, the recruitment of another 7 Farm Demonstrators and the

establishment of scatter plot trials to follow up the Land Use Survey. The intention is to provide an efficient extension staff, whilst at the same time essential information on the correct methods of crop and stock production is being obtained.

21. Progress in recruitment and training has had to be restricted during the year to the selection of the staff, pending the appointment of the Agricultural Education Officer, and the erection of the training Hostel at the Central Farm. Some scatter plots have however been laid down in the Corozal and Belize areas.

MAIN CROPS.

22. Appendix II tabulates the quantities and values of Agricultural Exports and Imports for the year. Interesting export developments are:—

- (1) the increasing value of the fishery trade, \$110,862 compared to \$89,900 in 1951;
- (2) exports of the citrus industry, despite an unfavourable season, were worth \$853 479 compared to \$732,000;
- (3) the export of over 1,000 tons of maize largely to Jamaica and Trinidad;
- (4) the gradual revival of coconut exports, which touched the low peak of one million in 1950, rose to a $1\frac{3}{4}$ million in 1951 and now total $2\frac{1}{2}$ million;
- (5) the first export, consisting of 450 tons of sugar, for many years, and,
- (6) the first production exports of Ramie fibre from the Colonial Development Corporation's estate.

CITRUS.

23. The 1951/52 Crop in the Stann Creek Valley was an exceptionally good one and the Citrus Company's factory at Pomona operated until March. The 1952/53 crop was, by contrast, disappointing, proving to be but $\frac{3}{5}$ ths of the previous one. It was virtually over by the end of the year.

24. The Company have now installed a processor for oil extraction, thereby obtaining another valuable by-product.

25. Production figures at the factory for 1952 were:—

	Part 1951/52 crop 1.1.52 to 30.6.52	Part 1952/53 crop 1.7.52 to 31.12.52	Total
	<i>cases</i>	<i>cases</i>	<i>cases</i>
Fresh Fruit—Bruce Boxes*	15,986	45,339	61,325
Canned Grapefruit Juice (Sweetened) Cases of 24—(307) cans*	70,258	606	70,863
Canned Grapefruit Juice (Sweetened) Cases of 24—(404) cans*	10,645	—	10,645
Canned Orange Juice (Sweetened) Cases of 24—(307) cans	2,612	4,784	7,396
Canned Grapefruit Segments (Sweetened) Cases of 24—(307) cans	50,257	74,312	124,569
	<i>barrels</i>	<i>barrels</i>	<i>barrels</i>
Pasturized Grapefruit Juice in barrels of approx. 43 gals.	982	798	1,780
Syrup—barrels of approx. 43 gals.	200	339	539
		<i>lb.</i>	<i>lb.</i>
Orange Oil		1,055	1,055
Grapefruit Oil		1,098	1,098

*Note: A Bruce box is 90 lb. grapefruit or 100 lb. oranges. A 307 can is 20 oz. nett or 24 oz. gross; and a 404 can is 48 oz. nett.

26. The market for grapefruit, fresh or processed, continuing to be stable and limited, there has been no new planting in the Stann Creek Valley, and the acreage remains at 789 with all but 4 in bearing.

27. On the other hand, as a result of the Company's ten year Ministry of Food contract for Orange Juice, plantings of Valencia Oranges have increased the acreage from 58 to 1,931.

(Note. These figures are taken from the survey carried out by the new Citrus Growers Association, and are based on a figure of 100 trees per acre.)

28. New plantings include the British Honduras Fruit Company's 156 acres at Alta Vista, and 150 established by the Citrus Company themselves. Both concerns have large nurseries established for producing their own budded plants.

29. Many smaller farmers in the Valley are establishing their own small nurseries and are being assisted with establishment and budding by the Extension Staff of the Department. The Department's own nurseries at the Agricultural Station produced and sold 14,678 plants to farmers in 1952.

30. Everywhere the present custom is to bud on sour orange stock; no serious diseases such as 'Tristeza' are known to occur, but little real orchard sanitation is practised other than clean bushing of weeds. The Citrus Company and some planters apply regular dressings of nitrogenous manures, but pruning and spraying are seldom under taken. Leaf curl due to aphids and scale insects are common, and attention to these pests is highly desirable. Smaller farmers would do well to carry out an energetic eradication campaign against the wee wee ants (*Atta cephalotes*), which also causes considerable trouble, as do the Drunken Baymen Wasps (*Melipona* sp?).

31. During May and June small swarms of grasshoppers (*Tropidacris dux Drury*) emerged from the high forest at the head of Stann Creek Valley and did some damage to young citrus at Middlesex.

32. At least two of the larger estates are now laying down complete fertiliser trials, and the Department is carrying out a survey of orchards covering all cultivations and the possible incidence of any deficiency diseases.

33. Whilst the Ministry of Food Contract is a tremendous boon to farmers in this area, there can be a danger in too much dependence on a one crop economy, as has been exemplified with bananas in the past. It is to be hoped that other crops such as Cacao can be encouraged to preserve a safer balance.

34. Elsewhere Citrus production is more concerned with supplies for home consumption and local markets, although two estates in the Cayo Districts are being planted up with Valencia Oranges, and others, including one on the Sibun River in Belize District, plan to do so in 1953.

35. From the Corozal District, some eight shipments of fruits were made to the Stann Creek factory, and fresh fruit also finds a ready sale over the border at Chetumal in Mexico. In this area farmers are showing an increasing interest in proper spacing and planting of citrus as well as in the use of budded plants.

36. The Department's nursery at the Central Farm produced and sold 1,941 budded plants to farmers during the year.

COCONUTS.

37. Production, gauged by the export figures has shown a further increase this year with a good percentage of 'select'* nuts being obtained. This is attributed to the more favourable rainfall conditions which have been experienced over the last two years, rather than to any marked improvements in cultivation standards.

38. Even in the Northern Districts where cocals have been in sad shape since the 1942 hurricane, and which were again hard hit by the 1949 drought, the appearance of trees and the size and yield of nuts has shown improvement.

39. Cultivation standards however remain poor, with the minimum of bushing and clearing being carried out.

40. The position of the whole industry was surveyed and recommendations made in a report submitted by the Director in April. The recommendations included the need for a more detailed delineation of the most suitable soils, the laying down of fertiliser trials, the adoption of improved standards of cultivation, the provision of rehabilitation funds, and a Hurricane Insurance system, with the essential proviso of the formation of a Producers Association.

41. Attempts are now being made to form an Association, whereafter the workings of rehabilitation assistance and hurricane insurance can be put into operation.

*Note.— 'Select' nuts, for export, measure over 5 inches in diameter.

42. The export of whole nuts continued to the United States, with further expansion in the numbers of those shipped to the United Kingdom. Copra was shipped entirely to Jamaica and oil exports were negligible.

43. Coconuts continue to be an important crop for the Cays and coastal areas, and for many farmers they represent their chief source of cash income. In the Stann Creek District producers shipping to dealers in Belize obtained \$40 to \$55 per thousand for select nuts and \$4.25 to \$4.50 per case of 24 pint bottles of oil.

44. The usual higher and pre-Christmas peak for United States whole nut prices was not forthcoming this year.

45. In February, Professor R. E. D. Baker from the Imperial College of Tropical Agriculture, Trinidad, visited the Colony to advise on the condition of plantations, particularly in the Northern District. In his report he confirmed that there was no sign of any epidemic disease, such as the Jamaica Unknown disease, being present.

46. He was of the opinion that where soil conditions were suitable good production was being achieved, but in other areas better cultivation standards were necessary, and in some unsuitable ones the plantations should be abandoned altogether.

47. He drew attention to the damage being done by both Red Ring disease and the Coconut weevil (*Rhynocophorus palmarum*) and advocated a general clearing up campaign.

48. Soil samples taken from the Consejo area near Corozal were reported on by Professor Hardy, of the Imperial College of Tropical Agriculture, as being unsuitable for coconuts because of the high content of free calcium carbonate and gypsum in addition to the generally high content of chloride. Leaf samples from unhealthy palms in this area showed a very high Boron content and it was concluded that Boron toxicity might well be amongst the other complex factors causing poor growth.

49. More recently the theory has been advanced that the water table in this area may consist of a fresh water layer superimposed upon salt water. After several years of drought the fresh water layer thins out and the tree roots obtain too much salt, which causes a falling off in condition. Only after better rains will the trees recover, as the fresh water layer again builds up; this is what has happened this year. Such conclusions clearly indicate that this area is a marginal one for successful coconut production.

BANANAS AND PLANTAINS.

50. It was an unhappy year for those trying to expand Banana production; particularly was this so for the British Honduras Fruit Company in the Stann Creek Valley. Their plantations were very severely affected by Cercospora Leaf Spot Disease, and even when more adequate spraying equipment was forthcoming, the difficulties of controlling the disease were overwhelming.

51. During the dry season poor growth symptoms and root troubles were also observed and a number of specialist advisers were called in.

52. The troubles were considered to be caused not by any new disease but from the use of poor planting material, stripping of top-soil with excessive clearing, and, in particular, the planting up of unsuitable soils.

53. As a result the area in bananas had been cut from 1,500 to 850 acres by the end of the year, and a portion of the estate planted up to citrus.

54. The Company shipped 176,030 stems during the year, of which 1,752 were bought from small farmers, this being a new and belatedly introduced venture.

55. Elsewhere the cultivation of both bananas and plantains was restricted to supplying local markets; Leafspot and Panama diseases continue to affect production of the Gros Michel variety of bananas, and the main trade is in Plantains.

RAMIE (*Boehmeria nivea*)

56. The Colonial Development Corporation continued with the expansion of their Barton Ramie Estate where an area of 423 acres had been planted up by the end of the year, although 50 acres of this needs replanting. Clearing is proceeding for another 400 acres.

57. The first shipment of 30,000 lb. China Grass was made in November to the United States.

58. A wilting condition showed up in small patches during the dry season and early rains; this was investigated by Professor Wardlaw from Manchester University. A fungus of the *Basidiomycete* group was found to be present, but it was not determined whether this was a causative or a secondary infection.

SUGAR AND RUM.

59. In the main producing area of Corozal District, farmers have been speculating on the expansion of the Pembroke Hall factory and increased plantings are continuing. Here the area under cane was estimated to have increased from 1,390 to 2,010 acres.

60. The 1951/52 crop was a good one, although with the low standards of cultivation practised average overall yields were poor; one planter who has begun to utilise mechanical equipment for his cultivation, however, recorded a yield of 42 tons per acre. The factory continued in operation until mid June, although difficulties were experienced from March on owing to the shortage of labour for cutting and the high competitive prices being offered, which rose from 70 cents to \$1.50 per ton in some instances.

61. Production figures at the Pembroke Hall factory were: 2,120.60 tons of sugar (755.85 white plus 1,364.75 brown) from 17,123.81 tons of cane ground, plus 11.09 tons recovered from the 1951 crop. The extraction rate was 7.93 tons cane per ton of sugar compared to 7.64 in 1950/51. 450½ tons brown sugar were exported.

62. The estimate of the 1952/53 crop is 32,000 tons of cane, giving 2,000 tons brown sugar for export, and 2,000 tons white and brown for local consumption.

63. Discussions have been in progress during the year with regard to the expansion of the factory and the inclusion of outside capital. No definite decisions had been taken by the end of the year, and unfortunately the opportunity of obtaining a second-hand mill from Jamaica was lost owing to the protracted nature of the negotiations. Meanwhile the Company took *ad hoc* measures to improve the factory to enable it to take off all the canes offering in 1953.

64. In the Toledo District 6 small mills have again been in operation, and they produced 37,570 lb., crude brown sugar and 60,000 lb. of molasses. The extraction rate is poor and is estimated to vary from 16 to 28 tons cane per ton of sugar. With the heavy rainfall experienced in this area the Sucrose content is inevitably lower.

65. On one property where yield and production figures were recorded 1 acre of 3-year-old ratoon cane gave 21.41 tons from which 3,000 lb. of sugar were extracted (i.e. 15.98 tons per ton of sugar). Production costs were \$101.75 and the saleable value of the sugar and molasses was \$252.

66. The Department's propagation plot of introduced varieties established at Louisville in the Northern District in 1950 was supplied and a second area planted up with the same varieties in June. B34104, POJ2878 and B3337 gave some trouble in establishment, whilst B37161, B4098, B41211 and B41227 had a much better take.

67. There were 8 distilleries operating in 1952 which produced 35,464 liquid gallons equivalent to 53,042.765 proof gallons of rum.

COHUNE.

68. Although one enterprising exporter has tried to produce a small portable nut cracking plant, his efforts have so far been unsuccessful, and the fullest exploitation of this forest crop is still impossible.

69. A report was received from the Colonial Products Advisory Bureau in June, concerning a consignment of nuts forwarded in 1951 for trial cracking on a machine normally utilised for candlenuts; the machine was found to be unsuitable for cohune unless modifica-

tions were carried out; unfortunately neither is it sufficiently portable and field collection and transport of nuts to a central unit would still be required. This has been shown in the past to be uneconomic. The collection of Cohune nuts remains therefore primarily a small scale peasant industry.

70. Cohune Kernels, oil and meal were exported during the year mostly to Jamaica, but supplies of the last for utilisation as a feeding stuff by local stock raisers were not always readily available.

CACAO.

71. The Colonial Development Corporation's project on the Sittie River Estates has hung fire whilst a decision was awaited not only on the lines development should take but also on the outcome of the banana scheme. Cuttings and seed of improved clonal material were introduced successfully from Trinidad, although the total number established was only about 130 plants. Some 30 acres have been planted up with Glyricidia for shade purposes, and some of the old Cacao was cleared.

72. Squirrels continue to be troublesome owing to the isolated position and small size of plantations.

73. Elsewhere Cacao has been maintained only on a small scale, mostly by the Toledo Indians for their own use.

PINEAPPLES.

74. A group of farmers in the Corozal District operating through a steering Committee and with the assistance from the Agricultural Credits fund, have now in cultivation some 110 acres of pineapples.

75. In Belize and Stann Creek Districts also, interest is being shown in the expansion of this crop. At the present time one small cannery is operating in Belize, and the Citrus Company in Stann Creek are offering prices for fruit so that they can can in the off season for citrus.

76. Cultivation standards are improving particularly in the Corozal area, and in Stann Creek some planters are trying to combine pineapple cultivation through citrus.

77. The varieties grown are mostly local Horsepine and Sugarloaf; few Smooth Cayenne occur and the Department is collecting material for multiplication, as well as introducing the Natal Queen variety.

RICE.

78. The main centre of production remains in Toledo District, but elsewhere, as for example in Corozal, farmers are trying to expand production. At Patchakan in Corozal District, a group of farmers cultivated 50 acres communally in a promising initial effort.

79. Cultivations and harvesting continue to be handicapped by weather conditions, and primitive standards. The 1952 yields were affected by adverse early rains. The early B. H. Creole variety, which is widely grown, gave fair yields with the later British Guiana 79 somewhat higher.

80. Padi Purchases in the Toledo District were:—

						lb.
Punta Gorda	..	..	..	..	..	647,977
Barranco	..	..	..	..	..	47,941
Monkey River	..	..	..	..	..	43,333
San Antonio	..	..	..	..	..	81,000
Private buyers from all areas	..	..	..	..	..	77,677
Total	..	..	..	..	..	897,928

Noteworthy is the performance of the Indian Village of San Pedro Columbia which in only its second year of production has produced 124,000 lb.

81. Purchases from the other Districts were as follows:--

						<i>lb.</i>
Belize	..	..	..	..	..	23,933
Orange Walk	..	..	..	..	..	10,071
Corozal	..	..	..	..	..	46,947
Total	..	..	..	..	..	80,951

Any spectacular improvement in rice production has perforce to await the arrival of the specialist for whom provision is made in the Development Plan, but who has yet to be appointed.

82. Meanwhile the Department has carried out small scale variety trials at the Punta Gorda Agricultural Station and will have seed of higher yielding varieties for issue to selected farmers in 1953.

83. Several private individuals have recently started to operate their own small mills. As a result of the Marketing Board introducing a stricter buying system based on moisture percentage, many farmers sold to these mill owners rather than take the extra trouble of drying their rice in order to gain higher prices.

MAIZE.

84. The Maize crop was affected firstly by the early rains preventing a good burn prior to planting, and therefore from weed competition; and secondly, where planted on low ground, from water logging.

85. In the extreme Northern and Southern areas crops were poor, but elsewhere owing to increased acreages, large quantities were harvested. It is estimated that for this reason, despite the fact that growing conditions were less favourable than in 1951, an exportable surplus of 1,000 tons will again be available.

BEANS.

86. The cultivation of Red Kidney Beans, encouraged by a favourable guaranteed price offered by the Marketing Board, continues to expand in Toledo, Cayo and Belize Districts. The 1951/52 crop was a good one, although the earliest planted were poor because of heavy rain. For the 1952/53 crop however early planting in November was most successful.

87. The Marketing Board again imported seed from the U. S. A., the arrival of this being delayed by the dockers strike in October; the price also had to be increased to 27 (28 in the Districts) cents a pound, which was not popular, the farming community being as yet unable to appreciate that quality seed prices must necessarily be higher than that of the harvest crop.

88. In the Northern Districts farmers grow Black Beans, and some Black Eye Peas rather than the Red Kidney variety. They also tried Baby Red Kidney and some Pinto Beans.

89. Most of the Beans and Peas grown find their way into local trade direct, and it is therefore difficult to estimate total production. However the Marketing Board's purchases of 199,500 lb. of Red Kidney Beans from the 1951/52 Crop enabled imports to be curtailed for five months.

ROOT CROPS.

90. Cassava, Yams and Sweet Potatoes are all grown in limited quantities everywhere, although Cassava is a particularly important crop for the Carib community in the coastal and riverine areas. The local markets remain good for these products and expansion could well be attempted, were the producers to make greater use of the fork and the hoe.

VEGETABLES.

91. Vegetable production continues to be somewhat fitful, although there are a number of farmers who have good gardens around Belize, and others elsewhere who depend for their livelihood on tomato and cabbage production.

92. There are hopeful signs that more organised production will become possible through the establishment of a Growers' Association in the Belize District. The Association also aims to market, thereby hoping to achieve more equitable prices for its members.

93. As in 1951 one planter in the Cayo District operated a cannery for peppers, string beans and tomatoes.

MINOR FRUITS.

94. Avocado Pears, Mangoes and Pawpaws all contribute to the farming budget in the districts, and here again production could well be expanded and improved by the planting of new varieties. A scale disease has seriously affected fruit setting of avocados particularly at Progreso in Corozal; departmental efforts to evolve a spray technique to deal with this have not yet been successful.

LIVESTOCK.

95. *Cattle*. There has been some slight improvement in management standards during the year, coupled with the planting of increased areas of fodder, particularly guinea grass. Nevertheless there is still a very long way to go before cattle production can be reckoned either efficient, or properly understood.

96. The overriding principles of the past appear to have been to let the stock look after themselves, and the cheaper the outlay the greater the profit. Neither of these ideas can possibly result in a thriving industry; to eradicate them will take time, for demonstration and education, but at least the germ of the desire for better stock production has already shown itself.

97. With a favourable dry season, there were fewer deaths than usual in 1952 amongst cattle, and were stockowners to subdivide pastures, practise rotational grazing and establish reasonable reserves, there would be no need for any losses at all.

98. It is possible that the resurgence of interest in the livestock industry has resulted in part from the decision by the Colonial Development Corporation to abandon their project which was sited on the Mountain Pine Ridge and at Iguana Creek in the Cayo District. This came about early in the year after an independent working party had submitted their report in February. The Corporation decided that owing to the high overhead costs of their particular scheme it could not be an economic proposition.

99. This decision was received with considerable dismay in the Colony, and discussions have since been proceeding amongst various interested parties, including visitors from overseas, to see whether any alternative scheme can be devised. Meanwhile pending the evolution of any such scheme the Department has maintained 57 of the Corporation's locally purchased herd at the Central Farm.

100. In May His Excellency the Acting Governor convened a Meeting at Cayo, the centre of the principal Cattle area in the Colony, to discuss the problems facing the industry. A Livestock Owners Association is now in the process of being formed as a result of this meeting.

101. The control of slaughter of female stock was continued throughout the year, and efforts were made to make controls more effective; even so 164 were slaughtered without covering permits. However the percentage of cows and heifers slaughtered in the Colony slaughter houses fell from 50.7% prior to controls being instituted in August 1951, to 39% for the last 5 months of 1951, and to 20.8% for 1952.

102. Meat was in short supply early in the year, particularly in Stann Creek; 213 animals were imported from Honduras, which were destined for slaughter.

103. Full slaughter house returns show that the average weights of animals killed are still very small, being 235 lb. for the whole Colony. This is partly because facilities for cold storage are either very poor or non-existent. These returns are shown in Appendix III.

104. Attached as Appendix IV, is a table listing imports and exports of livestock for the year.

105. The Livestock Census carried out at the end of 1951, has been analysed in greater detail and the specific tables are set down in Appendix V.

106. No outbreaks of disease were reported amongst cattle during the year.

107. *Pigs*. Production has increased, having been assisted by the formation of Cooperative Producer Associations in Toledo District, but maintenance and feeding are still very primitive consisting of free range around the villages and maize as the sole concentrate fed. With little attempt at breed improvement either, standards and quality remain low and the average live weight at slaughter was but 57 $\frac{3}{4}$ lb.

108. There were no reported outbreaks of infectious diseases amongst swine.

109. *Sheep and Goats*. These are of small importance, only 232 and 29 head being slaughtered respectively in Colony slaughter houses during the year. The sheep, imported by the Colonial Development Corporation from Guatemala in 1951, were grazed on the Mountain Pine Ridge but had shown little promise by the time this project was closed down.

110. *Horsekind*. Two deaths were reported from Never Delay from Biliary Fever, and one from Equine Distemper at Orange Walk.

111. *Poultry*. The general standard of poultry raising is haphazard and largely free range. People bring fowls home with them from other areas, or sell off those which look sick, and thereby help to transmit disease. Periodic outbreaks of diseases decimate village flocks, as occurred in Barranco and Punta Gorda, and in the Northern Districts during the year. Despite departmental efforts to encourage better standards of poultry keeping, little improvement is yet apparent.

112. Only amongst a few larger producers centred near to Belize are standards better; these farmers import day old chicks from the States and are trying to supply Belize with egg requirements. As yet their efforts are handicapped by the high cost of feeding stuffs and the lack of any organised production of local substitutes.

113. The Veterinary Officer reported 46 outbreaks of Fowl Typhoid and one of Fowl Cholera.

MARKETING.

114. The Marketing Board issued annual crop loans totalling \$25,630, with an additional \$4,911 in Red Kidney Bean seed loans, to approved farmers for rice and corn and bean production. This represents an area of 1,347, 4,882 and 596 acres respectively. The total sums issued as loans by the Board for the 4 years 1949—52 are \$127,588. Of this \$94,788 has been recovered, \$6,466 is still owed from the disastrously dry year of 1949, and \$13,508 has still to be collected from 1952.

115. The guaranteed prices offered by the Board were:—

Rice Padi	..	..	\$5.00 per 100 lb. at Punta Gorda and Belize;
			4.75 elsewhere
Maize	..	..	3.25 per 100 lb. at Belize; \$3 elsewhere
R.K. Beans	..	..	18.00 per 100 lb. at Belize; \$17.75 elsewhere
Black Eye Beans	..	..	18.00 per 100 lb. at Belize; \$17.75 elsewhere
Baby Red Kidney Beans	..	..	15.00 per 100 lb. at Belize; \$14.75 elsewhere
Annatto	..	..	15.00 per 100 lb. at Belize.

116. During the year the total purchases made by the Board included:—

					lb.
Rice Padi	..	..	..	..	928,637
Maize	..	..	..	..	3,607,796
Red Kidney Beans	..	..	..	..	60,000

117. The Board milled 1,689,426 lb. of padi with an output of 900,468 lb. clean rice; this was approximately 4 months supply for local demand. The new mill averages 22x100 lb. sacks per hour; a new drying plant is to be erected in Belize, and two sack driers in Toledo District.

118. The Board exported 325 tons dried Maize to Trinidad and 829 tons to Jamaica.

119. The Agricultural Credits fund Committee has approved long term loans totalling \$9,414 with the covering approval of the Board.

120. The Director of Agriculture served as member of the Board and of the Agricultural Credits fund Committee during the year. The district staff of the Department continue to inspect farms, issue and collect loans and purchase produce on behalf of the Board; this work is particularly burdensome in the Northern, Southern and Western Districts; but as yet it has not been possible for the Board to provide its own staff who can take over.

121. As in 1951, the Chairman of the Board and the Acting Marketing Officer held useful discussions with our staff during the December course in Belize.

PART II

WORK OF THE DEPARTMENT OF AGRICULTURE.

STAFF.

122. The full staff list of the Department is shown in Appendix VI; there were no major changes during the year except that Mr. C. M. Grieve was appointed as an Agricultural Officer and took up duty in charge of Stann Creek District, one other Agricultural Officer post remains to be filled.

123. Recruitment was proceeding outside the Colony to fill the following posts provided in the Development Plan:—

Development Officer
Agricultural Education Officer
Experimental Officer, (Supplementary Scheme)
Rice Specialist
Tobacco Specialist
Engineer for Land Clearing Scheme
Marketing Officer.

124. Within the Colony six Temporary Farm Demonstrators were selected and one Foreman Mechanic, but their actual appointment is to be made early in January 1953.

125. Mr. F. F. Orio, Jr., Farm Demonstrator Grade I, was away for 3 months on a C. D. & W. study course to the Imperial College and to see the work being done by the Agricultural Departments in other West Indian Islands.

STAFF COURSE.

126. The third Departmental Staff course was held in Belize in December; it was opened by His Excellency the Governor, with the Colonial Secretary and Development Commissioner also present. During the four days of the course visits were made to several farms, to Maestre's cigarette factory, and a day was spent at the Central Farm. Agricultural films were shown and the series of talks and discussions covered a wide field. Costs were covered by Colonial Development and Welfare Funds.

EXTENSION WORK.

127. The Field Staff of the Department have been active in all areas with efforts to advise and assist the farming community; their multifarious duties include the demonstration and control of wee wee ants with "Chlordane", the inspection of holdings for (a) grant of title under the Location Ticket System, (b) Agricultural Credit fund loans, and (c) Marketing Board Loans. Assistance and propaganda for the treatment and prevention of livestock diseases, with the establishment and budding of citrus nurseries, and the encouragement of vegetable production.

128. The inspection of lands, loan issues and collections and the purchasing of crops for the Marketing Board, occupy a considerable time in most Districts; it is impossible to convey in a few written words the amount of work involved in this, so much of which is too easily overlooked or taken for granted. Whilst staff are necessarily kept in close touch with the farmers through this work, it is hoped that before long their main duty can be made more constructive.

129. Little progress can be achieved with instruction and demonstration of, for instance, better poultry management until an all-out effort can be devoted to this work in selected areas. During the year agricultural educational films were shown in Belize, Orange Walk and Corozal, and the Veterinary and Livestock Officers aided the District Staff in their efforts to encourage improved standards, but as yet there is little result to be seen.

130. The Young Farmers Club movement, fostered by the Senior Farm Demonstrator, is beginning to catch on in the Corozal area and can prove a very valuable adjunct to extension programmes. The members of one Club also visited the Central Farm on a day's excursion. It is hoped that when an Agricultural Education Officer has been appointed this movement can be given added impetus and guidance.

131. The Land Use Survey team, which was operating in the Corozal District for the last three months of the year, has also been very helpful in creating a welcome interest in better standards of cultivation and a more co-operative response from farmers. It is imperative that this opportunity should now be actively followed up.

132. The 1952 Estimates included provision for the purchase of one Ferguson tractor, plough and harrow for trials of preparing small holders lands in the Stann Creek Valley. Unfortunately owing firstly to the delay in the approval of the Estimates and thereafter in the supply of the equipment, it was not possible to carry out a full scale trial. Rather than disappoint farmers however, a tractor was sent down from Central Farm.

133. The areas for which cultivation was required by 31 farmers, ranged from a few tasks* to 3 acres; and difficulty was experienced not only because of the very small size of the units of land, but also because they had not been adequately cleared.

134. A charge of \$1.50 per running hour was made for this service.

135. It is obvious that there is little future for this undertaking unless the farmers will consolidate their blocks into larger and more economic units and will first clear their land. At the present they are willing to pay a high rate to have this work done for them, as it is still cheaper than the employment of hand labour. Repair and running costs are however very high.

136. The scheme will be given a further and more extended trial in 1953, before it is reviewed.

LAND INSPECTION.

137. *Location Tickets* for grant of title. During the year the staff inspected and reported on 269 holdings for alienation throughout the Colony. The 1952 survey report states that a total of 120 titles were issued for an area of 2,476 acres.

138. The following figures submitted from Stann Creek District are indicative of the operation of this system—71 parcels were inspected, of which only 27 were recommended for grant of title. Of these 71 parcels 50 were being reinspected for at least the second time.

139. Before the grant of title is recommended, the applicants have to satisfy specified conditions which include the establishment of a reasonable proportion of permanent crops or grass.

140. Whilst the system does require and encourage proper standards of cultivation, it does not ensure that these standards will be maintained once title has been acquired. It is

*Note.— A task is 25 yards square.

possible therefore that when the Land Use Survey has been completed, it may well have to be revised. At the present time, also, it does not guard against the cultivation and abuse of steep hillsides, which necessarily must be prevented in the future.

141. *Agricultural Credits Fund.* District staff have also inspected 70 properties, whose owners have applied for longer term loans to the Agricultural Credits Fund. Initially many applications were received from farmers who were hopeful for assistance, but who either had insufficient security to offer or who did not put forward workable schemes and who therefore had to be disappointed.

142. Reports submitted by the Staff through District Commissioners are considered by a Sub-committee consisting of the Development Commissioner, the Magistrate Belize, the Director of Agriculture, and two nominated Members. Final approval rests with the Marketing Board.

143. Twenty-one applications have been approved totalling \$48,294 for schemes including:—Vegetable and pineapple production, citrus and livestock development and the purchase of agricultural machinery. The Pineapple Steering Committee in Corozal also received loans totalling \$9,356 for a group of 31 individual farmers. Approved loans in 1951 and 1952 are sited as follows:—Belize District 12, Cayo 6 and Stann Creek 8.

144. The funds concerned have been provided by Colonial Development and Welfare and repayment is set depending on the type of undertaking over about 5 years; interest is payable at 5—6%.

145. *Marketing Board Annual Crop Loan Inspections.* District Staff reported on holdings and recommended cash and seed loans for Corn, Rice and Beans for a total of 807 farmers and a cash value of \$30,542.

PESTS AND DISEASES.

146. *Pests.* In June small swarms of grasshoppers emerged from the high forest at the head of the Stann Creek Valley and caused damage to young orange trees. The swarms were later reported also from the Silk Grass Reserve, Blair Athol, Alta Vista and Mullins River, all in Stann Creek District.

147. Their attacks were limited to Coconut and Cohune fronds, and Citrus and Banana leaves. Damage was not serious and recovery quickly resulted.

148. Specimens were identified by the Bureau of Entomology and Plant Quarantine of the U.S.D.A. as being *Tropidacris dux* (Drury).

149. Early in September, Dr. Morales Agacino, Chief Entomologist of the International Anti Locust Organisation for Central America (F.A.O.), visited the Colony and confirmed this identification at Stann Creek.

150. In his report he stated that the outbreak was of minor importance, and could well have been caused by unusual climatic influences which had first provoked an increase in population, and then a gradual withdrawal from the natural forest habitat to other freer zones nearby.

151. He suggested that, nonetheless, vigilance should be exercised in clearing forest lands for agricultural purposes in case any tendency should develop for this species to change its habitual feeding propensities.

152. In other respects there have been no major outbreaks of crop pests although numerous species continue to cause minor depredations. The Wee Wee Ant (*Atta cephalotes*) is still very much in evidence, despite the fact that it is now controllable if property owners will apply Chlordane systematically to nests. Drunken Baymen Wasps which defoliate citrus can also be similarly controlled.

153. *Selenothrips rubrocinctus* was identified damaging Avocado Pears and Mangoes in the Cayo District.

154. The Coconut Weevil (*Rhyncophorus palmarum*) continues to do damage in cocals, and whilst some planters undertake a proper cutting out and trapping campaign, others do nothing to help eradicate it.

155. *Diseases.* Apart from Cercospora Leaf Spot of Bananas, Red Ring disease of coconuts and the wilting of Ramie already referred to, no plant diseases were of serious evidence. *Sclerotium rolfsii* is to be found in many areas and can cause trouble to vegetable crops and flowers.

156. Amongst livestock, the chief troubles were the usual sporadic outbreaks amongst poultry, which were attributed to fowl typhoid. Only one outbreak of Ulcerative Stomatitis was reported in cattle, from the Central Farm; cattle being otherwise free of disease. Three cases of Equine Distemper and two of Biliary Fever amongst Horsekind were reported.

DISTRICT AGRICULTURAL STATIONS.

157. With but one District Agricultural Officer so far appointed, it was possible to commence the rehabilitation of District Centres as provided for in the Development Plan only at Stann Creek. At Corozal and Orange Walk the Stations have continued on a care and maintenance basis, with the former partially leased out to a private individual.

158. At Punta Gorda limited rice variety work was maintained and seeds of improved varieties will be available for distribution for multiplication by selected farmers in 1953. Yields

Variety						Padi lb. per acre
GC 79	..	..	..	..	..	970
D54/42	..	..	..	..	..	3,000
D110	..	..	..	..	..	3,600
Lead	..	..	..	..	..	1,450
D95-42	..	..	..	..	..	2,200

159. At Stann Creek work was concentrated on the production of budded citrus plants for sale, and at last some of the arrears of orders are now being worked off. However with the planting rush which is occurring in the Valley further orders continue to pour in. 14,678 plants were distributed mostly Valencia orange, and 50,000 seedlings will be available for budding early in 1953. 57 grafted Mango plants were distributed and some 300 will be ready next year. Demand is very slender for Rambutan, Velvet apple, Mangosteen and Akee, Breadfruit, Jackfruit, Surinam Cherry and Ceylon Gooseberry, all of which are available.

160. In other respects, a start has been made to clean up pastures and orchards and to rejuvenate the buildings. The face lifting campaign will continue into 1953, when it is hoped that the Station can again be operating efficiently.

THE BAKING POT CENTRAL FARM.

161. Ten acres of land to the north of the main road and west of the garage were cleared and partially stumped; final stumping of the arable area to the south of the road was virtually completed, a total of 248 stumps being removed by digging, cutting and burning at an average cost of \$4.62 each. These stumps had been left cut at ground level from the original clearing in 1949, in the hope that they would rot down, but they remained a focus for weeds and a hazard for implements, and in particular Santa Maria (*Calophyllum Brasiliense*) which represented 32% of the total, 78% showed only slight rotting even after 3 years.

162. A start has been made in planting *Gliricidia* live fence posts to replace the original "botan" palm, which has proved useless as permanent fencing.

163. With a rainfall of 62.99 inches, this has been the wettest year in the 4 years life of the farm; distribution and growing conditions were good, there being 143 days recorded rainfall, and the heaviest 6.30 inches on October 8th. Details for the four years 1949 to 1952 are:—

	1949	1950	1951	1952
January	2.90	6.77	1.57	2.45
February	0.44	2.01	2.74	0.63
March	0.96	1.49	1.11	0.20

					1949	1950	1951	1952
April	..	..	...	..	0.13	0.47	2.25	2.73
May	..	..	..	..	0.00	0.99	2.33	4.28
June	..	..	..	..	3.32	10.06	5.51	9.47
July	..	..	..	..	1.21	4.98	10.60	9.48
August	..	..	..	..	2.35	5.78	3.25	5.26
September	..	..	..	..	4.21	4.80	6.25	5.81
October	..	..	..	..	2.03	8.92	8.78	13.23
November	..	..	..	..	1.96	2.30	5.57	6.74
December	..	..	..	..	5.58	1.60	6.88	2.71
Total	..	..	..	..	25.09	50.17	56.84	62.99

4 year Average: 48.77 inches.

164. *Crops*. Sixty-two acres of *Maize* were planted in late May at a spacing of 36 x 12 inches; growth was good although some lodging occurred; the yield average (unmanured) was 1,200 lb. per acre (shelled) compared to 1,468 lb. (manured) in 1951. Production costs were reduced owing to greater mechanisation, less weed growth and stumping.

165. Seed selection, begun in 1949, appears to be having some effect on weight of grain and size and uniformity of cost. A comparison of the outturn from a "Cargo"* of the 1951 and 1952 crops shows:—

		1951				1952	
		lb.	per cent			lb.	per cent
Grain	..	96	63	..	..	111	67
Husk	..	36	23	..	..	34	20
Cob	..	22	14	..	..	20	13

*A "Cargo" is a volume measure equivalent to 60 quarts of shell corn, i.e. a cargo of corn should shell out to 60 quarts.

166. *Red Kidney Beans*. A yield of 13,500 lb. was recorded from 40 acres; an average of 337 lb. per acre. Losses were heavy in some fields owing to rotting; the best yield was 612 lb. per acre from Strip VIII.

167. *Yams*. Four varieties planted in June 1951 were harvested in January and February and gave:—

Variety	Acreage	Equivalent yield tons per acre
White	0.50	10.0
Carib	0.14	11.0
Chinese	0.04	5.4
Yellow	0.06	4.4

These varieties were replanted in April and a staking and non-staking trial incorporated.

168. *Sweet Potatoes*. Seven varieties were planted in 1/12 acre plots in June; they were the local Flag All, John Directly, Red Nut, and local Red, and the introduced B44, B5 and Black Rock. Planting material will be used for a large scale trial in 1953.

169. *Cassava*. Five "bitter" varieties are being maintained and opportunity was taken to test the starch producing value of these with the following results:—

Trinidad white stick	8	} lb. tubers gave 1 lb. starch
Local white stick	9	
Parasol	12	
Aitin Mangi	12	
Aitin Montegnia	14	

170. *Groundnuts*. The two standard varieties Tennessee Red and Empire Bright from half-acre plots planted in June gave 1,201 and 880 lb. per acre unshelled nuts respectively.

171. *Trials and Experiments*. (a) *Maize*. A 3 x 3 x 3 factorial experiment for three levels of N.P.K. in various combinations was laid down on Strip II; the results were variable but gave indications that the use of fertiliser is not economic at the levels required for maximum yield; the average overall yield was 1,175 lb. per acre. It is probable that soil variation interfered too much with this experiment for the results to be really reliable.

172. *Groundnuts*. Thirty varieties introduced from Nigeria were grown at a spacing of 30 x 24 inches in 1/40 acre plots for comparison with Tennessee Red and Empire Bright.

Spanish 205 led with a yield equivalent to 1,680 lb. per acre unshelled. Natal Common, Empire Bright, Kano 32, Spanish 205, MPB and MPA were the earliest to mature in 97 days, and Natal Common was the easiest to harvest.

173. *Cotton*. Twenty-four varieties of East African Upland, Sudan Egyptian, Sudan Upland and American Upland cottons were planted in 1/54 acre plots in October 1951. The American Upland were the most outstanding, being quick maturing, hardy, heavy yielding and having a higher ginning outturn.

174. Samples of lint were sent to the Shirley Institute for a general report, which is very favourable for the Upland types.

175. Further trials were planted in October, to include investigations of the economics of spraying against stainers.

176. *Mijo (Dwarf Sorghum)*. Two varieties were planted in 1/10 acre plots in June and were ready for harvest early in October. The Dwarf variety gave a yield of 960 lb. grain per acre; the Double Dwarf variety was not harvested because of heavy smut damage.

177. *Loofahs (Luffa Cylindrica)*. These were grown on a trellis consisting of posts four feet apart in rows and with horizontal wires 18 inches apart, in a 1/10 acre plot. Although initially more expensive than the 'bush' trellis erected in 1951, this required no repairs if it lasts, for three years, and will be cheaper in the long run. Plants were too severely pruned, and yields were reduced compared to 1951, being 500 fruit compared to 677; there were indications however that pruning has encouraged larger size.

178. Samples of the 1951 crop were favourably reported upon by the Colonial Products Advisory Bureau, who stated that they were the best so far received from the Colonies; production costs however would have to be reduced if fruit were to compete with Japanese production.

179. *Pineapples*. A collection is being established on the farm of all local varieties in order that correct identifications can be determined and nomenclature confusion be cleared up. Introduced varieties now being multiplied include Natal Queen and Cabezona.

180. *Vegetables*. Varietal trials were started with seeds from different suppliers in the U.S.A., United Kingdom, Puerto Rico and Costa Rica.

181. Trials for utilising sawdust in compost resulted in marked nitrogen deficiencies showing up with Peppers and tomatoes.

182. *Sugar Cane*. Ten varieties introduced from the Central Sugar Cane Breeding station; B41227, B3337, B34104, B45152, B4098, B42231, B45151, B37161, and B4362, were maintained for further multiplication.

183. *Citrus Nursery*. A total of 2,153 budded citrus plants were produced, of which 1,941 were distributed during the year; production costs are high owing to the difficulty of maintaining adequate water supplies and obtaining 'greenfingered' labour.

184. A start has been made with the establishment of an economic orchard in C.S.A. I.

185. A list of introductions made during the year is attached as Appendix VII.

186. *Livestock*. There were 16 calvings, equally distributed between bulls and heifers, and 46 services including 20 for the Colonial Development Corporation's cattle temporarily held here.

187. Only limited expansion of the pasture area and livestock scheme was possible as final approval of the scheme is still awaited.

188. Two ten acre savannah pastures were however established and fenced, and a further 40 acres cleared.

189. 176 lb. of guinea grass seed was collected from the areas planted up in 1951. There is now therefore 60 acres of potential savannah grass pasture, and 18 of guinea grass, with an eventual target total of a further 200 acres.

190. Small scale trials of weedicides, utilising 24D and 245T in oil and water sprays, show promise that the latter may be of value; trials with Phosphate, Potash and Lime fertilisers were inconclusive other than that there was a possible phosphate response.

191. It is hoped that when this scheme is finally approved more rapid progress can be achieved in 1953, although naturally it will be some time before the breeding up programme can begin to show results among the stock.

192. With the abandonment by the Colonial Development Corporation of their livestock project, the emphasis of livestock development at the Central Farm is now being placed primarily on the improvement of beef rather than dairy stock, although a small herd of Grade Jersey will be graded up. The beef herd is to be $\frac{3}{4}$ Red Poll x $\frac{1}{4}$ Brahman on local stock.

193. *Water Supply.* This is still in abeyance, because, although the Public Works Department have drilled successfully and found water at 60 feet, they are having to await the arrival of a suitable pump to prove the adequacy of this supply.

194. *Buildings.* A new clerical staff house was erected, and a branch of the Belize Jubilee Library opened in the Dispensary reading room. The two new drying floors with sliding roofs were completed.

195. *Equipment.* The mechanical equipment has been maintained and worked well throughout the year; a total of 2,953 hours was put in by the two Ferguson tractors at a cost of \$1.23 per hour.

196. *Small Holdings.* In order to encourage the permanent labour force to have their own small holdings and in response to their request, nine two acre lots on the estate were demarcated and allotted to them. Most of these were partially cleared and cultivated for maize but by the end of the year all but two had been abandoned.

LAND USE SURVEY.

197. The scheme for a Land Use Survey of the Colony, R473, for which Central Research Funds have been made available, got under way when the leader, Mr. A. C. S. Wright, arrived in the Colony at the end of August.

198. For general administrative and accounting purposes, (and, of greater importance, so that general overall policy may be coordinated) the three man unit has been attached to the Agricultural Department.

199. By the end of December the survey of the greater part of the Corozal District had been completed by the unit.

200. The survey is being carried out by means of a rapid soil reconnaissance utilizing every field method which permits of a quick assessment of present fertility and future productivity. The land is also viewed from the air, and use made of the existing sets of air photographs. The landscape of each refinal unit, thereby determined, is being analysed by means of ground traverses. Eventually a 1:50,000 ecological soil map will be produced, which will present the field results on a broad basis, but which will provide a foundation from which more detailed surveys can be made should they be necessary in the future.

201. Whilst no definite deductions are yet presentable, the results to date provide a valuable indication of the pattern which the survey will eventually formulate, together with a lot of very interesting data and the knowledge that a welcome enthusiasm exists amongst the farmers themselves.

SCATTER PLOTS.

202. So that the ideas formed by the survey can be quickly proven, a series of 'ad hoc' scatter plot trials are being established; for the present owing to the lack of experienced staff, these are being laid down and supervised by the Survey unit. The plots also include small scale cultivations and fertiliser trials.

203. At Louisville, a second plot of the ten Barbados *Sugar Cane* varieties was established, and that planted in 1950 was consolidated and supplied. A *Cotton* trial with Del-

tapine (American Upland Variety) unfortunately failed owing to poor germination, and the subsequent drought prevented a successful supply with another variety. This trial was to have tested dusting treatments against stainer and bollworm pests. It will be repeated with earlier planting in 1953.

204. On a private estate at Estrella, a fertiliser experiment with varying dressings of N, P, and K was laid down on *Sugar Cane* variety, POJ2878.

205. Small observation plots to study the effect of these fertilisers on *pineapples* were established on the farms of three Corozal growers; three coconut trials comparing forking, mulching and the use of fertilisers were also laid down.

206. In the Belize District, a plot of pine ridge land 10 miles from Belize and close to the main Cayo road, was planted up in December with three fodder grasses viz: Guinea Grass, Molasses Grass and Para Grass, and tropical Kudzu. Manurial treatments include single and mixed dressings of N, P, and K.

207. None of these plots had been established for a sufficient time to allow for any striking results to become apparent by the end of the year.

LEGISLATION.

208. The Regulations relating to the Import of Foreign Animals were redrafted during the year, being based on those now operating for Jamaica; they have not yet become law.

209. The following Statutory Instruments were enacted during 1952:—

No. 7 of 1952 The Pineapples (Importation from Mexico) Regulations.

No. 31 of 1952 The Burning of Vegetation (Amendment) Rules.

No. 36 of 1952 The Foreign Animals Importation (Prohibition) (Dominion of Canada and the United Kingdom) Regulations.

No. 46 of 1952 The Foreign Animals Importation (Restriction) (Jamaica) Regulations.

No. 62 of 1952 The Foreign Animals Importation (Prohibition) (Dominion of Canada and the United Kingdom) (Amendment) Regulations.

No. 63 of 1952 The Foreign Animal Products Importation (Restriction) Regulations.

VISITORS.

210. A large number of visitors were welcomed to the Central Farm, including Mr. N. L. Mayle, C.M.G., Assistant Secretary, Colonial Office, H.M. Ambassador to Mexico, Mr. F. S. Collier, C.B.E., Forestry Adviser to the Secretary of State, Dr. F. J. Harlow, M.B.E., Adviser of Technical Education, Mr. A. de K. Frampton, C.M.G., Agricultural Adviser to the Comptroller for Development and Welfare in the West Indies and Lord Rowallan, Chief Scout.

211. The Director was fortunate in being able to visit Honduras and the United Fruit Company's plantations during July, and with assistance from Colonial Development and Welfare to undertake a very informative three weeks tour of Jamaica, the Virgin Islands, Antigua, St. Lucia and Trinidad in December.

212. The Director served as a member of the Marketing Board, of the Agricultural Credits Fund Sub-Committee, as Chairman of the Permanent Exhibition Committee and on the Listowel School Advisory Committee. He also was a member of the Independent Working Party which reported on the Colonial Development Corporation's Livestock project.

ACKNOWLEDGEMENTS.

213. In conclusion I should like to record my acknowledgement of the good work done by the staff of the Department through the year, and of the very willing cooperation and assistance received from other Departments.

J. W. D. GOODBAN,

Director of Agriculture.

APPENDIX I.

Table 1.

SUMMARY OF RAINFALL FOR 1952

DISTRICT AND STATION	MONTH												TOTAL 1952	TOTAL 1951
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		
COROZAL DISTRICT														
Corozal Town ..	2.74	.48	.96	4.19	3.45	10.99	14.26	8.72	10.18	7.43	6.23	1.81	71.44	
Corozal Agstat ..	2.41	.55	1.77	2.65	2.57	12.28	11.56	4.09	10.03	7.75	8.31	2.21	66.18	49.61
Louisville ..	1.88	.57	2.99	1.23	3.56	13.26	11.25	5.24	10.18	9.01	10.43	1.40	80.00	55.40
Santa Cruz ..	2.67	.05	2.58	1.77	2.25	11.24	9.17	8.86	13.23	5.80	8.74			
Pembroke Hall ..					New Station							1.45		
ORANGE WALK DISTRICT														
Orange Walk Town ..	1.29	.82	.33	2.51	7.78	7.53	12.25	5.87	5.07	5.73	5.66	2.25	57.09	46.48
Gallon Jug ..	2.10	.02	.76	3.83	1.98	16.07	15.56	5.99	6.61	5.32	7.99	1.72	67.95	48.47
San Estevan ..	3.38	0.00	1.90	1.42	4.70	12.73	16.12	10.17	8.77	5.84	7.04	2.65	74.78	56.08
August Pine Ridge ..			New Station							11.40	7.30	1.31		
BELIZE DISTRICT														
San Pedro, Ambergris Caye ..		New Station				6.44	6.90	.41	3.70	8.55	12.49	3.49		
Half Moon Caye ..		New Station					5.33	1.52	5.45	14.51	6.02	1.46		
Maskalls ..		New Station									6.50	3.56		
Salt Creek ..	4.23	.06	.40	Gauge Broken	7.78	10.07	12.09	7.86	10.22	6.02	2.73		66.21	
Stanley Field ..		New Station				11.50	12.82	10.04	9.50	6.19	3.23			
Belize ..	2.66	.27	1.69	2.08	3.28	5.54	10.00	8.45	7.84	6.86	7.21	2.51	58.39	64.50
Gracie Rock ..	3.17	1.91	.29	3.20	1.63	7.82	15.09	17.91	5.68	8.90	6.31	1.65	73.56	
CAYO DISTRICT														
Benque Viejo ..	1.92	.32	1.28	1.82	4.30	9.28	6.22	5.61	4.27	12.20	7.72	2.05	56.99	
Cayo Town ..	1.73	.66	1.03	2.09	1.48	7.49	8.34	3.77	1.79	13.99	6.87	2.51	50.95	45.69
Listowel ..	2.47	.51	.32	3.39	3.42	10.06	10.51	7.42	3.62	13.46	5.76	2.69	63.63	58.12
Central Farm ..	2.45	.63	.20	2.73	4.28	9.49	9.48	5.26	5.81	13.23	6.74	1.71	63.01	56.84
Barton Ramie ..	3.26	.39	.15	2.88	3.29	9.64	14.54	8.22	5.71	13.34	7.22	1.82	70.46	
Iguana Creek ..	3.02	.48	.14	2.75	2.45	13.10		Closed						
Augustine ..	2.15	.64	1.11	3.15	4.04	10.53	8.77	4.88	11.06	13.33	9.12	3.98	72.76	55.05
Roaring River ..		New Station				8.48	15.83	13.42	6.39	9.99	11.93	2.35		
Sibun Camp ..		New Station					14.14	11.81	5.75	13.23	12.97	4.85		
STANN CREEK DISTRICT														
Stann Creek Town ..	2.90	.30	.03	4.51	1.97	12.48	12.87	4.22	10.54	8.13	9.96	5.60	73.51	57.20
McLinda Farm ..	5.71	.47	.29	7.59	3.49	7.70	12.49	6.94	10.88	11.57	9.63	4.63	81.39	77.58
Stann Creek Agstat ..	6.75	.84	.43	11.75	4.07	8.09	13.13	8.49	11.79	9.98	11.01	5.88	92.21	75.03
Pomona ..	6.92	1.13	1.35	12.27	1.87	9.59	13.52	12.83	12.03	9.74	5.36	4.67	91.28	
False Creek Farm ..	8.42	.66	.90	10.84	2.42	10.59	12.30	13.05	8.88	8.75	7.30	4.77	88.88	99.89
Cow Creek Farm ..	8.05	.53	.94	8.53	7.16	15.06	15.35	14.04	10.31	10.89	8.03	4.63	98.52	107.43
Alta Vista ..	8.90	1.66		11.77	5.47	13.30	13.87	12.53	9.48	7.31	5.23		102.40	
Tipperary ..		New Station							11.97	11.31	8.21	5.02		
Unity Farm ..										11.22		5.17		
Middlesex ..	6.29	.43		7.72	2.89	18.30	16.91	14.86	7.45	11.83	8.27	4.27	115.32	
Regalia ..	5.66	.14	1.06	5.02	2.61	12.52	9.59	8.59	12.92	8.25	4.49	4.07	74.92	
Blair Athol ..		New Station								7.00	11.55	3.09		
Mango Creek ..		.08	.24	4.47	1.15	13.63	14.16	11.53	13.46	14.18	12.10	3.51		
TOLEDO DISTRICT														
Punta Gorda Town ..	9.90	5.03	.85	5.83	8.89	26.40	28.37	26.35	11.80	8.98	11.96	4.00	148.36	
Punta Gorda Agstat ..	7.99	4.29	.95	6.58	5.82	21.49	29.12	31.75	15.69	7.04	9.42	4.23	144.37	180.10
San Antonio ..		New Station								11.66	9.41	7.26		
Barrianco ..		New Station								8.90	10.50	5.67		
Hunting Caye ..		New Station								21.33	19.92	11.32		

Table 2.

PRESSURE, TEMPERATURE AND HUMIDITY

				Mean Barometric Pressure		Mean Monthly Maximum		Mean Monthly Minimum		Mean Monthly Relative Humidity	
				Belize	Stann Creek	Belize	Stann Creek	Belize	Stann Creek	Belize	Stann Creek
January	..	..	..	30.058	30.089	83.4	82	67.1	67	92	90
February	..	..	..	29.967	29.931	78.0	90	69	65	85	76
March	..	..	..	29.873	29.862	85.4	87	77	67	83	82
April	..	..	..	29.941	29.886	87.6	86	76.9	69	82	80
May	..	..	..	29.896	31.428	88.2	88	79.1	72	83	98
June	..	..	..	29.888	29.887	88.0	87	77.9	73	84	81
July	..	..	..	29.932	29.949	86.8	87	78.2	73	87	79
August	..	..	..	29.919	29.776	88.5	87	81.1	73	86	79
September	..	..	..	29.841	29.884	88.0	89	81.4	73	86	81
October	..	..	..	29.935		82.8	84	74.9	70	84	77
November	..	..	..	29.966	30.051	82.8	83	73.5	69	83	80
December	..	..	..	30.024	29.552	79.0	80	71.6	65	86	82

APPENDIX II.

AGRICULTURAL IMPORTS 1952 (Customs returns)

					Quantity	Value \$
Cattle for breeding	..	..	..	Nos.	17	—
Cattle for slaughter	..	..	..	Nos.	213	22,321
Poultry	..	..	..	Nos.	5,071	2,627
Bread, Biscuits, Cakes	..	..	..	Cwt.	710½	41,521
Butter	..	..	..	Cwt.	1,496	145,615
Butter Substitutes	..	..	..	Cwt.	1,803	63,180
Cheese	..	..	..	Cwt.	1,684	107,923
Cocoa, prepared	..	..	..	Cwt.	234½	17,726
Coffee: Raw	..	..	..	Cwt.	23	1,375
Prepared	..	..	..	Cwt.	144½	11,286
Substitutes	..	..	..	Cwt.	—	14,496
Eggs, fresh	..	..	..	Doz.	2,708	1,995
Fish, preserved	..	..	..	Cwt.	362½	27,829
Rice	..	..	..	Cwt.	17,883	217,479
Flour	..	..	..	Cwt.	69,506	607,367
Peas and Beans	..	..	..	Cwt.	5,865	129,412
Lard and Substitutes	..	..	..	Cwt.	5,699	160,506
Beef in Barrels	..	..	..	Cwt.	516	20,112
Pork in Barrels	..	..	..	Cwt.	2,881	96,436
Pork, Mess	..	..	..	Barrels	27	1,696
Preserved meat, canned	..	..	..	Cwt.	1,719½	119,823
Ham and Bacon	..	..	..	Cwt.	324	31,792
Milk, Condensed	..	..	..	Cwt.	16,032	535,467
Unsweetened	..	..	..	Cwt.	3,344	92,810
Powdered	..	..	..	Cwt.	1,169	39,237
Sugar, refined	..	..	..	Cwt.	7,483	94,578
Spices	..	..	..	Cwt.	151½	18,552
Vegetables, Onions	..	..	..	Cwt.	3,051	41,009
Potatoes	..	..	..	Cwt.	5,606	56,086
Garlic	..	..	..	Cwt.	143	5,124
Other fresh	..	..	..	Cwt.	778½	12,658
Canned	..	..	..	Cwt.	518½	15,655

AGRICULTURAL AND OTHER EXPORTS 1952

Item		Quantity	Value \$	Total Value \$
Bananas	.. Bunches	178,127		334,693
Plantains	.. Bunches	7,986		2,645
Citrus:—				
Grapefruit, fresh	.. Cwt.	31,380	149,261	
Grapefruit, Juice	.. Cwt.	40,637	364,317	
Grapefruit, Segments				
canned	.. Cwt.	21,472	293,500	
Oranges, fresh	.. Cwt.	3,025	4,605	
Oranges, flavoured syrup	Cwt.	2,774	41,796	853,479
Other fruit	.. Cwt.	822		2,384
Vegetables	.. Cwt.	53		414
Spices, Anatto	.. Lb.	67		16
Maize	.. Cwt.	25,289½		142,144
Sugar, unrefined	.. Cwt.	9,006		63,166
Poultry	.. Nos.	283		283
Eggs, fresh	.. Doz.	3,383		2,262
Coconuts	.. Nos.	2,540,700	187,948	
Coconut Kernels	.. Nos.	100	20	
Copra	.. Cwt.	1,914	25,218	
Coconut oil	.. Glns.	5	8	213,194
Cohune, Kernels	.. Cwt.	3,196	41,716	
Cohune, Meal	.. Cwt.	40	132	
Cohune Oil	.. Glns.	8,178	15,990	57,838
Cacao	.. Cwt.	4½		50
Ramie Fibre	.. Cwt.	268		7,500
Mangrove Extracts	.. Cwt.	800		1,320
Hides & Skins: Alligator	.. Cwt.	53		24,523
Skins				
Fish, fresh	.. Cwt.	470	9,069	
Fish, dried	.. Cwt.	505	9,336	
Lobsters, fresh	.. Cwt.	444	10,539	
Lobsters Tails	.. Cwt.	1,600	79,943	
Conch	.. Cwt.	14½	80	
Turtle	.. Cwt.	1½	87	
Hawksbill & Other Shell	.. Cwt.	7	1,532	
Shrimps	.. Cwt.	6	276	110,862

LIVESTOCK SLAUGHTER RETURNS 1952

DISTRICT	CATTLE				SWINE				SHEEP				GOATS			
	No.	Total Dead Weight (1b)	No.	Total Dead Weight (1b)	No.	Total Dead Weight (1b)	No.	Total Dead Weight (1b)	No.	Total Dead Weight (1b)	No.	Total Dead Weight (1b)	No.	Total Dead Weight (1b)	No.	Total Dead Weight (1b)
Cayo	258	55,588	536	44,104	18	745	—	—	—	—	—	—	—	—	—	—
Belize	2,523	607,490	6,297	339,607	183	5,575*	27	450	—	—	—	—	—	—	—	—
Orange Walk	98	15,578	313	19,253	—	—	—	—	—	—	—	—	—	—	—	—
Stann Creek	117	32,454	224	26,465	31	1,265	—	—	—	—	—	—	—	—	—	—
Punta Gorda	31	6,073	271	15,454	—	—	—	—	—	—	—	—	—	—	—	—
Corozal	47	4,840	283	13,407	—	—	2	60	—	—	—	—	—	—	—	—
1952 TOTAL	3,074	722,023	7,924	458,290	232	7,585	29	510	—	—	—	—	—	—	—	—
1951 TOTAL	3,226	811,326	5,828	330,047	156	6,225	—	—	—	—	—	—	—	—	—	—

*Note: Estimated figure

LIVESTOCK IMPORTS AND EXPORTS 1952.

IMPORTS														EXPORTS			
Poultry				Cattle				Horsekind									
Day Old Chicks		Fowls		Hatching Eggs		Bulls		Cows and Heifers		Calves		Slaughter Animals		Mules		Dogs	
Jamaica	36	—	—	—	—	14	—	—	—	—	—	1	—	—	—	—	—
United Kingdom	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
U.S.A.	4,985	150	140	1	—	—	—	—	—	2	1	—	—	—	—	—	—
Honduras	—	—	—	—	2	—	—	213	—	—	—	—	—	—	—	—	—
Guatemala	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9
Cuba	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Trinidad	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Mexico	—	—	—	—	—	—	—	—	—	10	—	—	—	—	—	—	281
Salvador	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
1952 TOTAL	5,021	50	140	3	14	—	213	10	4	2	—	—	—	3	1	—	9 283
1951 TOTAL	2,850	—	—	4	6	—	120	12	11	—	80	1	6	—	2	2	—

ANALYSIS OF LIVESTOCK SURVEY: SEPTEMBER 1951

TABLE No. 1

District				No. of Cattle		No. of Cattle Owners	
Whole Colony				15,644		600	
Corozal	..	..	..	166		20	
Orange Walk	..	..	..	1,963		69	
Cayo	..	..	..	7,601		190	
Belize	..	..	..	4,180		224	
Stann Creek	..	..	..	962		48	
Toledo	..	..	..	772		49	

TABLE 1A.

Incidence of cattle by Districts (per cent)

District						Cattle
Whole Colony	..	..	..	..	..	100%
Corozal	..	..	..	..	..	1.06
Orange Walk	..	..	..	..	..	12.5
Cayo	..	..	..	..	..	48.5
Belize	..	..	..	..	..	26.7
Stann Creek	..	..	..	..	..	6.1
Toledo	..	..	..	..	..	4.9

TABLE No. 2

Numbers of Cattle in Categories by Districts

District	Total Cattle	Bulls	Steers	Cows	Heifers	Bull Calves	Cow Calves
Whole Colony	15,644 100%	1,054 6.7	597 3.8	7,312 46.6	3,011 19.2	1,976 12.6	1,694 10.8
Corozal	166	19	9	64	33	22	19
Orange Walk	1,963	221	16	924	340	279	183
Cayo	7,601	269	388	3,306	1,424	1,130	1,084
Belize	4,180	452	32	2,290	934	272	200
Stann Creek	962	47	77	406	150	157	125
Toledo	772	46	75	322	130	116	83

TABLE No. 3

Number of Cattle owners and of Stock in herds of various sizes

District	All Herds	Size of Herd					
		1 - 5	6 - 15	16 - 30	31 - 100	101 - 200	over 200
		Number of Owners					
Whole Colony	600 100%	222 37	177 29.5	109 18.1	64 10.6	16 2.6	12 2.0
Corozal	20	9	7	4	—	—	—
Orange Walk	69	16	24	17	10	—	2
Cayo	190	89	42	27	16	6	10
Belize	224	69	72	49	28	6	—
Stann Creek	48	19	16	5	5	3	—
Toledo	49	20	16	7	5	1	—

Number of Stock							
Whole Colony	15,644 100%	714 4.6	1,609 10.7	2,381 15.2	3,273 21.0	2,200 14.0	5,407 34.5
Corozal	166	24	62	80	—	—	—
Orange Walk	1,963	46	231	395	457	—	834
Cayo	7,601	318	431	603	805	811	4,573
Belize	4,180	203	665	1,048	1,436	828	—
Stann Creek	962	68	153	101	233	407	—
Toledo	772	55	127	154	282	154	—

APPENDIX VI.

STAFF LIST AT 31st DECEMBER 1952.

Post	Name	Station	Leave etc.
Director of Agriculture	J. W. D. Goodban	Headquarters	
Senior Agricultural Officer ..	G. B. Gregory	Headquarters	On leave 2.3.52 to 30.11.52
Agricultural Officers	G. A. Southwell	Central Farm	Proceeded on leave 3.11.52
	C. M. Grieve	Stann Creek	Arrived 20.8.52.
	Vacant		
Livestock Officer	S. S. Dale	Central Farm	
Veterinary Officer	Dr. P. G. Everett	Belize	
Agricultural Instructor	D. D. Haynes	Punta Gorda	Proceeding on retirement leave 1.1.53.
Temporary Agricultural Instructor	E. G. Russell	Central Farm	
Senior Farm Demonstrators ..	F. F. Orio, Sr.	Orange Walk	
	P. B. Lizarraga	Corozal	
Farm Demonstrators Grade I ..	F. F. Orio, Jr.	Cayo	On Instructional course B.W.I. from 4.1.52 to 25.6.52.
	C. D. W. Atkins	Barranco	Vacation Leave 1.9.52-2.10.52
	H. S. Nelson	Belize	
	J. A. Lizama	Louisville	
	J. A. Swasey	Stann Creek	
Farm Demonstrators Grade II	I. S. Stephenson	Punta Gorda	
	T. L. Brackett	Stann Creek	
	W. A. Grant	Belize	
	W. J. Baeza	Central Farm	(Livestock Assistant)
Temporary Farm Demonstrators	F. Bautista	Succotz	Proceeded on 32 days Vacation Leave as from 15.12.52
	T. Ramos	Sittee River	
	N. L. Williams	Mullins River	
	A. Thompson	Stann Creek	
	E. Bautista	Carolina	
	A. Gentle	Dump, Toledo	
	E. O. R. Gill	Lucky Strike	
	J. A. Santos	Grace Bank	
	J. Chief	Roaring Creek	
	G. I. Marin	Cayo	
	C. Torres	Yo Creek	
	H. Robateau	Central Farm	

APPENDIX VII.

PLANT AND SEED INTRODUCTIONS—1952.

Central Farm.

1. Jute, 3 varieties	Seed	Dept. of Agriculture, British Guiana
2. Soya Bean, 2 varieties ..	Seed	Imperial College of Tropical Agriculture, Trinidad.
3. Maize, Farm Variety ..	Seed	Imperial College of Tropical Agriculture, Trinidad.
4. Pigeon Peas, 7 varieties ..	Seed	Imperial College of Tropical Agriculture, Trinidad.
5. Hill Rice, St. Augustine No. 4	Seed	Imperial College of Tropical Agriculture, Trinidad.
6. Sweet Corn	Seed	Imperial College of Tropical Agriculture, Trinidad.
7. Grape, 6 varieties	Cuttings	U.S.D.A., California
8. Coconuts, 3 varieties; Dwarf ..	Seed	Dept. of Agriculture, St. Lucia.
9. Black Pepper	Seed	Department of Agriculture, Malaya.
10. <i>Andropogon gayanus</i>	Seed	Dept. of Agriculture, Northern Nigeria.
11. <i>Pennisetum pedicellatum</i> ..	Seed	Dept. of Agriculture, Northern Nigeria.
12. Castor Bean, 2 varieties ..	Seed	Costa Rica.
13. <i>Elaeis Guineensis</i>	Seed	Costa Rica and Honduras.
14. <i>Theobroma cacao</i>	Seed	Costa Rica.
15. <i>Panicum maximum</i> var <i>trichoglume</i>	Seed	Queensland Dept. of Agriculture.
16. Improved Turrialba Tomato ..	Seed	Costa Rica.
17. Mijo, 2 varieties	Seed	
18. Rice, 5 varieties	Seed	Imperial College of Tropical Agriculture, Trinidad.
19. <i>Brachiaria dictyoneura</i> ..	Cuttings	Imperial College of Tropical Agriculture, Trinidad.
20. <i>Ixophorus unisetus</i>	Cuttings	Imperial College of Tropical Agriculture, Trinidad.
21. <i>Paspalum plicatulum</i>	Cuttings	Imperial College of Tropical Agriculture, Trinidad.
22. <i>Sorghum vulgare</i>	Seed	Imperial College of Tropical Agriculture, Trinidad.
23. Adlay, <i>Coix lachryma jobi</i> ..	Seed	Imperial College of Tropical Agriculture, Trinidad.
24. Teosinte (<i>Euchlaena Mexicana</i>)	Seed	H.M. Consul, Guatemala.
25. Coffee, 34 varieties	Seed	Dept of Agriculture, Jamaica.
26. Sweet Pepper (Milfruto) ..	Seed	Costa Rica.
27. Tea	Seed	Dept. of Agriculture, Jamaica.
28. <i>Indigofera endecaphylla</i> ..	Seed	Imperial College of Tropical Agriculture, Trinidad.
29. <i>Stylosanthes guianensis</i> ..	Seed	Imperial College of Tropical Agriculture, Trinidad
30. <i>Canarium ovatum</i>	Seed	United Fruit Co. Honduras.
31. <i>Bauhinia Galpinii</i>	Seed	United Fruit Co. Honduras.
32. <i>Ravenala Madagascariensis</i> ..	Seed	United Fruit Co. Honduras.
33. <i>Calliandra Emarginata</i> ..	Seed	United Fruit Co. Honduras.

FINANCIAL STATEMENT

EXPENDITURE

Head 5 Agriculture

Subhead

1	Personal Emoluments	\$42,321.29
2	Transport Allowances	1,430.72
3	Travelling	3,398.83
4	Running & Maintenance of Vehicles	2,898.54
5	Freight on plants etc.	121.74
6	Scientific Equipment	107.63
7	Incidentals	90.04
8	Upkeep of Farm Equipment	226.93
9	Upkeep of Temporary Buildings	2,148.76
10	Labour	9,914.43
11	Control of pests and diseases	533.24
12	Implements & Tools	674.59
13	Revenue Producing Operations	6,241.10
14	Agricultural Extension Work	403.65
15	Boats & Doreys	162.94
16	Visits of Specialists	135.95
17	Veterinary Drugs	1,572.17
18	Housing Rentals	817.50
19	Supervision, Maintenance of grounds etc.	7,299.07
20	Experiments & Trial Plots	2,566.37
21	Commercial Crops & Operations	10,789.27
22	Mechanical Equipment for Baking Pot Estate	1,850.00
23	Purchase of equipment, for ploughing peasants' lands Stann Creek Valley	3,948.90
24	Veterinary Equipment	1,059.16
TOTAL EXPENDITURE		\$101,712.82

Colonial Development and Welfare Schemes:

D.229	A-C Local Food Production	6,027.70
D.981	A-D Baking Pot Central Farm	1,105.49
D.1236	Livestock Officer	10,184.32
D.1807	Staff for Agricultural Dept.	5,971.53
D.1819	Scatter Plot Trials	5,305.74
R473	Land Use Survey	13,728.82
D.1868	Land Clearing Scheme	9,949.11
D.1108(203)	Agricultural Staff Course	358.35
D.1824	District Agricultural Stations	1,524.78
TOTAL C.D. & W. SCHEMES		\$54,155.84

REVENUE

HEAD 4—

Subhead 13	Receipts from Central Farm	\$5,144.55
14	Sale of produce and plants, Agricultural Stations	5,164.38
15	Sale of material for control of pests etc.	124.10
28	Fees for Veterinary Officer's services	
TOTAL REVENUE		\$10,433.03

APPENDIX VIII

	Capital	1st year	2nd year	3rd year	4th year	Total Recur- rent	TOTAL
	£	£	£	£	£	£	£
1. (a) Departmental Staff	7,000	6,543	8,749	9,713	11,172	36,172	43,177
(b) Training of Extension Workers ..	6,105	475	925	925	925	3,250	9,355
2. Completion of Central Farm and estab- lishment of Livestock scheme ..	42,500	2,020	4,110	4,780	4,950	15,860	58,360
3. District Stations and Livestock ..	13,910	1,325	3,650	4,950	5,000	14,925	28,835
4. Land Clearing Units	27,500	9,325	10,975	10,725	10,725	41,750	69,250
5. Rice and Tobacco trials	13,000	3,400	7,100	7,100	5,450	23,050	36,050
6. Land Utilisation (Central Funds) ..	2,725	7,443	6,494	4,338	—	18,275	21,000
7. Crop trials, etc.	13,075	2,290	4,785	5,325	5,335	17,735	30,810
8. Land Settlement	10,000						
9. Subsidies		1,000	4,000	5,000	5,000	15,000	15,000
10. Marketing and Credits (Loan) ..	116,250	4,500	4,500	4,500		13,500*	129,750
11. Reserve		1,500	1,500	1,500	1,598	6,098	6,098
	252,065	39,821	56,788	58,856	50,155	205,620	457,685

* Note—Includes £116,250 loan.

Less: Revenue (tables 5 and 6)	10,435
Central Research Funds	21,000
Loan Funds	116,250
	147,685

From British Honduras Colonial Develop-
ment and Welfare Allocation £310,000

ORIGINAL PAID